

EXHIBIT 13

Rulemaking: 04-04-003

Exhibit No. _____

Witness: William Monsen

Commissioner Michael Peevey

ALJ: Meg Gottstein / Mark Wetzell

**DIRECT TESTIMONY OF WILLIAM A. MONSEN
REGARDING THE 2004 LONG-TERM RESOURCE PLAN OF
SAN DIEGO GAS & ELECTRIC COMPANY
ON BEHALF OF THE CITY OF SAN DIEGO**

Rulemaking 04-04-003

August 6, 2004

A handwritten signature in dark ink, appearing to read "Peevey", is located in the bottom right corner of the page.

1

2 Q. What is the City of San Diego's interest in this proceeding?

3 A. The City is, in aggregate, the second-largest consumer of electricity in the SDG&E
4 service territory. It is also the largest city in terms of population and electricity usage by
5 its citizens and businesses in SDG&E's service territory. The City actively participated in
6 the interim resource plan proceeding (R.01-10-024) and closely monitored the
7 Commission's review of SDG&E's Grid Reliability RFP. The City has been and
8 continues to be concerned about the unique reliability situation faced by the region. The
9 City seeks to ensure cost-effective reliability through resource planning that strikes a
10 balance between customer-owned resources and utility procurement and/or development
11 of diverse resources, especially renewable and energy efficiency resources.

12

13 Q. What is the purpose of your testimony in this proceeding?

14 A. To present my concerns regarding SDG&E's preferred long-term resource plan¹ to the
15 Commission.

16

17 Q. Please summarize your testimony.

18 A. I commend SDG&E for proposing a number of features in its 2004 long-term resource
19 plan that should contribute to improved system reliability in the San Diego region and a
20 more environmentally sustainable energy future. Nevertheless, SDG&E's plan is based
21 on a number of assumptions that concern me, including reliance on completion of a major
22 transmission expansion project to tap into out-of-area resources. I am also concerned by
23 what I perceive to be a lack of flexibility on SDG&E's part in relation to the future

¹ "Long-Term Resource Plan of San Diego Gas & Electric Company (U 902 E)," (SDG&E Testimony), July 9, 2004.

EXHIBIT 14

Decision 07-07-027 July 26, 2007

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking to Continue
Implementation and Administration of
California Renewables Portfolio Standard
Program.

Rulemaking 06-05-027
(Filed May 25, 2006)

**OPINION ADOPTING TARIFFS AND STANDARD CONTRACTS FOR
WATER, WASTEWATER AND OTHER CUSTOMERS TO SELL
ELECTRICITY GENERATED FROM RPS-ELIGIBLE RENEWABLE
RESOURCES TO ELECTRICAL CORPORATIONS**

This would be in addition to the 123.8 MW from water/wastewater customers, for a total of 497.5 MW.

4.3. No Expansion to Other Utilities

We decline to expand the program to SDG&E and other utilities for now. SDG&E expresses opposition, preferring to focus its limited resources on projects with more “bang for the buck.” For example, SDG&E says the administrative cost of negotiating up to 20-30 contracts each for 750 kW or less (for its allocated share of about 20 MW) at MPR prices would divert attention and resources from contracts with greater procurement amounts at or below MPR.

To the contrary, simplicity and cost-savings are important reasons why the § 399.20 program is by tariff and standard contract. The administrative cost to “negotiate” these purchases is small when done by tariff/standard contract. PG&E notes that this is one advantage of the program, thereby providing “access to sources of supply that cannot or would not otherwise market power.”⁴³

Nonetheless, we accept the proposition for now that SDG&E and others should focus their attention on larger projects. The entire allocation for these remaining utilities is 21.6 MW. We are satisfied with an initial expansion of 228.4 MW through SCE and PG&E. This will allow respondents and parties to present factual, legal and public policy issues, as necessary or appropriate for our further consideration and decision, as discussed below. It will allow respondent, parties and the Commission to learn from the initial experience.

⁴³ April 1, 2007 Proposal, p. 11.

EXHIBIT 15

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Thursday, October 18, 2007

Study includes inaccurate assumptions about SDG&E's Long-Term Energy Plan

Today, a study was released, called the "2020 Report," which recommends an alternative to San Diego Gas & Electric's (SDG&E) Long-Term Energy Plan for the San Diego region. The study was authored by Bill Powers, a long-time critic of Sempra Energy and SDG&E's energy projects. Powers often opposes Sempra Energy and SDG&E projects through regulatory opposition and litigation.

The underlying assumption of the study is that adequate efforts and incentives are lacking in SDG&E's Long-Term Energy Plan to increase reliance on renewable energy and promote greenhouse-gas reductions.

"These assertions are misleading and, in many cases, simply untrue," says Mike Niggli, chief operating officer for the Sempra utilities. "State law requires SDG&E and other investor-owned utilities to get 20 percent of their power from renewable resources by 2010 and reduce greenhouse-gas emissions to 1990 levels by 2020. SDG&E supports these laws and is executing a balanced energy plan to meet these requirements."

SDG&E's Long-Term Energy Plan

SDG&E is responsible for serving the electricity needs of more than 1.4 million customers. To fulfill this responsibility, SDG&E developed a Long-Term Energy Plan—a 10-year blueprint to ensure safe and reliable power for the growing San Diego region.

The plan includes a balanced portfolio that ensures adequate energy supplies through a combination of resources and actions, including energy-conservation programs, reduction of energy demand during peak-usage periods, renewable energy resources, and new transmission lines and local power plants.

"As we learned from California's energy crisis earlier this decade, a balance of infrastructure, resources and conservation is needed to meet San Diego's energy needs," says Niggli. "SDG&E's Long-Term Energy Plan provides this balance and ensures the energy reliability for San Diego's future."

Process for input

In December 2006, SDG&E filed its Long-Term Energy Plan (2007-2016) with the California Public Utilities Commission (CPUC) for approval. Before the CPUC approves the plan, parties have the chance to submit comments and recommendations that the commission will consider before it makes its final decision.

“We wholeheartedly encourage a healthy debate and innovative recommendations about San Diego’s energy future. If the authors of this study want their recommendations to be considered, they should participate in the process established by the CPUC,” says Niggli.

Inaccurate assumptions

SDG&E believes the “2020 Report” is based on unreasonably optimistic forecasts about future demand reductions, technology improvements and solar cost reductions.

Examples include:

- Demand-reduction targets that have been deemed unachievable by state regulatory experts,
- Gross underestimations of the cost of deploying rooftop solar power, by a factor of 10, on a broad scale.
- Demand-reduction assumptions for air conditioning that are more than double the actual SDG&E customer use (800 to 1,000 hours, while actual usage is closer to 300 hours).

Media coverage

Employees who live in the San Diego region could see media coverage about the findings in the “2020 Report.” The purpose of this article is to ensure that you have accurate information about SDG&E’s Long-Term Energy Plan and the process by which the plan is approved by the CPUC.

Related articles

- [Niggli editorial puts forth the facts about SDG&E’s Long-Term Energy Plan](#)
- [SDG&E seeks renewable-energy resources to meet future needs](#)

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EXHIBIT 16

1 SAN DIEGO, CALIFORNIA, APRIL 7, 2008 - 10:10 A.M.

2 * * * * *

3 ADMINISTRATIVE LAW JUDGE WEISSMAN: The Commission
4 will be in order.

5 This is the time and place for the first day
6 of hearing in Phase 2 of the Sunrise Powerlink project.

7 I have the additional appearance of Andrew
8 Swers as Information Only. He'll be working with
9 Mr. Thompson on behalf of Nevada Hydro.

10 And one additional appearance -- if you could
11 please hand it up -- Jacqueline Ayers, representing --
12 sorry, Jacqueline Ayer, representing herself as active
13 party.

14 Before we begin with our first witness, there
15 there's a set of pending issues related to followup from
16 an earlier motion by the Center for Biological Diversity
17 and the Sierra Club which was a motion to strike
18 portions of SDG&E's testimony that addressed legal
19 issues.

20 And I'm going to make time for us to have a
21 broader discussion about the motion, but because part of
22 it relates to Mr. Niggli's testimony, I wanted to just
23 indicate at this point that the motion will be granted
24 as it goes to all of the portions of Mr. Niggli's
25 testimony that were referred to in here.

26 And there will be exceptions to the extent to
27 which I will be granting the motion in other respects,
28 but as far as Mr. Niggli's testimony, the motion is

1 A I'm not sure. You might ask Mr. McClenahan
2 that question.

3 Q You don't know?

4 A (Nods head)

5 Q Okay. Let me narrow that down a little bit.

6 Does SDG&E have an assessment of the relative
7 costs of buying renewable power in the Edison service
8 territory, in other words, north of SONGS?

9 A I think there's two parts to your question I
10 would answer. One is that you can go out and look at
11 what the costs to produce the power are, but what we get
12 are bids. So we get bids that come in, and we have to
13 take the lowest priced bids.

14 And we're just not seeing any bids from those
15 areas. So I can't tell you that we have an assessment
16 given that others are not bidding.

17 Q Well, again, the image I get is of a passive
18 process. You put the RFP or RFQ out there and wait to
19 see who shows up.

20 Is SDG&E doing anything actively to pursue
21 significant renewable energy projects outside of its
22 service territory and north of the Imperial Valley?

23 A When we go out for the RFOs themselves, we try
24 to capture every developer we possibly can in that
25 process and to have them bid into our open process.

26 Q What are you doing to encourage them to bid
27 into the --

28 A I'm sorry?

1 understanding when it comes to the notion of whether you
2 could be going to northern California to buy the power
3 you need?

4 A Well, primarily because we're not getting any
5 bids from those areas, whether it's northern California
6 or the Tehachapis right now. And those people who have
7 development projects in those areas must be bidding into
8 renewables RFOs that they believe they can be successful
9 on.

10 Q Have you personally gotten on an airplane and
11 gone to northern California and talked to potential
12 developers?

13 A No, I personally have not.

14 Q Has anybody from SDG&E done that?

15 A That may be a question for Mr. McClenahan.

16 Q You don't know?

17 A I don't know, no.

18 Q You never asked anybody that, so -- is that
19 right, you've never asked anybody whether they've taken
20 any steps to try to go out and solicit bids?

21 A Personally, I have not. That's -- I have not
22 done that, no.

23 Q All right. In your testimony at 1.4, you
24 mention California's greenhouse gas goals.

25 A Yes.

26 Q Could you explain your understanding of what
27 those goals are?

28 A My understanding is that it's essentially

EXHIBIT 17

1.1 INTRODUCTION

SES Solar Two, LLC (Solar Two or Applicant) is seeking approval to construct and operate the Solar Two Project and its ancillary facilities (Project). The main objective of the Project is to provide clean, renewable, solar-powered electricity to the state of California. The electricity from the Project will assist the state in meeting its objectives as mandated by the California Renewable Portfolio Standard (RPS) Program and the California Global Warming Solutions Act. The Project will also address other local mandates adopted by California's electric utilities for the provision of renewable energy.

San Diego Gas & Electric (SDG&E) selected the Project to meet its objectives under the legislative requirements of the RPS Program through a least-cost, best-fit competitive solicitation. Because the Project is one of the three projects that SDG&E selected from the solicitation, the Applicant and SDG&E entered into a 20-year Power Purchase Agreement (PPA) for the provision of renewable electricity. This PPA will help SDG&E meet both its statutory mandate to purchase at least 20 percent of its electric power from renewable resources by 2010 and its future electricity requirements. The California Public Utilities Commission approved the PPA on 1 December 2005. The Project represents approximately 44 percent of SDG&E's RPS goals. The Project will be an important deployment of large-scale renewable solar technology in a commercial energy setting. The Project will generate power using low-cost solar power generation equipment produced by an optimized, high-volume manufacturing design and infrastructure. Much of the power from the Project will be generated at peak times, when the demand for electricity is greatest.

The Applicant intends to develop an electric generating facility with a nominal capacity of 750 megawatts (MW) using concentrating solar power (see Figures 1-1 through 1-3). The Project will be constructed on an approximate 6,500-acre site located in the Imperial Valley of California. The Project Site is approximately 100 miles east of San Diego, 14 miles west of El Centro, and approximately 4 miles east of Ocotillo Wells.

The Applicant is a private enterprise that is a wholly owned subsidiary of Stirling Energy Systems, Inc. The company recently received long-term funding from a strategic partner, NTR plc (NTR). NTR is an international developer and operator of renewable energy and sustainable waste management businesses in the United States, the United Kingdom, Ireland, and Continental Europe. The unique combination of the Applicant's technical expertise and NTR's track record in developing large-scale renewable energy and infrastructure projects provides a strong platform from which to realize the Project. This partnership will allow the Applicant to develop additional solar projects in other states and internationally.

1.2 APPROVAL PROCESS

This Application for Certification (AFC) has been prepared in accordance with the current California Energy Commission (CEC) power plant siting regulations and addresses each of the specified environmental areas. This approach is designed to facilitate review by CEC staff in accordance with the California Environmental Quality Act (CEQA). It is important to note that the majority of the Project is located on public land administered by the Bureau of Land

Management California Desert District (BLM). Therefore, this document is also being submitted to the BLM to review for grant of a right-of-way grant. This dual submission is consistent with the National Environmental Policy Act of 1969 (NEPA).

This AFC was prepared using guidance from a Memorandum of Understanding developed between the CEC and the BLM (see Appendix A, Memorandum of Understanding). The Memorandum of Understanding sets out the relative roles, responsibilities, and procedures CEC and BLM staff will follow when conducting their respective environmental reviews of the Project. The Applicant will conduct the construction and operation of the Project in accordance with all applicable laws, ordinances, regulations, and standards (LORS).

This AFC is intended to provide:

- a discussion of the purpose and need for the Project,
- a detailed description of the Project,
- an assessment of the anticipated Project effects on the existing environment, and
- a discussion of the Project's compliance with applicable LORS.

As discussed above, this AFC was prepared to meet the requirements of both CEQA and elements of NEPA. Both CEQA and NEPA require the Applicant to address any potential impacts or effects resulting from the construction and operation of the Project. This AFC provides CEQA determinations of significance; however, this document does not make these conclusions for purposes of NEPA to avoid a perception of predetermination for NEPA.

1.3 PROJECT DESCRIPTION

The Project will utilize the SunCatcher technology of Stirling Energy Systems, Inc. This technology is innovative, technically proven, non-polluting, and cost-effective in large utility-scale deployment. The SunCatcher is a proprietary solar dish Stirling system that the Applicant has developed. Each SunCatcher consists of a 25-kilowatt solar power generating system. The system is designed to track the sun automatically and to focus solar energy onto a Power Conversion Unit (PCU), which generates electricity. The system consists of an approximate 38-foot high by 40-foot wide solar concentrator dish that supports an array of curved glass mirror facets (see Photographs 1-1 through 1-3). These mirrors collect and focus solar energy onto the heat exchanger of the PCU. The PCU converts the solar thermal energy into electricity. Each SunCatcher operates independently and generates grid-quality electricity. The SunCatcher currently holds the world's record for the conversion of sunlight into grid-quality electricity (31.25 percent). The technology has been in development and operating in a variety of locations, including Huntington Beach and Daggett, California. At some of these locations, the technology has been in use for more than 20 years. The Applicant has been developing and operating the technology since 1996, most recently at the National Solar Thermal Test Facility, located at Sandia National Laboratories in Albuquerque, New Mexico. See Appendix B, Solar Stirling Engine, for more information on the SunCatcher's Stirling Engine.

Construction of the Project is expected to begin in late 2009 or early 2010 and will take approximately 40 months for full Project completion. However, renewable power from the Project will come online much earlier than 40 months after the start of the Project. As groups of SunCatchers are constructed, their renewable power will immediately be supplied to the grid. After Project completion, the Project will operate approximately 3,500 hours per year and is expected to have an overall availability of approximately 99 percent.

Of the approximately 6,500 acres of land to be developed for the Project, approximately 6,140 acres will consist of BLM-administered public land and approximately 360 acres will consist of privately owned land. The Applicant intends to develop the nominal 750-MW Project in two phases. The 300-MW Phase I of the Project will consist of approximately 12,000 SunCatcher dishes. The renewable energy from Phase I will be transmitted via the 500-kilovolt (kV) Southwest Powerlink transmission line, which is currently in operation. The Project will be connected to the grid at the SDG&E Imperial Valley Substation via a 10.3-mile, 230-kV interconnection transmission line that the Applicant will construct in a corridor parallel to the existing SDG&E 500-kV Southwest Powerlink transmission line.

The 450-MW Phase II of the Project will consist of approximately 18,000 SunCatcher dishes. Transmission studies indicate that the addition of this amount of electric capacity to the grid will require the proposed 500-kV Sunrise Powerlink (or equivalent) transmission line. Therefore, the construction and operation of Phase II is contingent on the approval and development of the Sunrise Powerlink transmission line or additional transmission capacity.

The Imperial Irrigation District (IID) will provide the water supply for the Project from its Westside Main Canal. The Project will obtain raw canal water, which will be treated to provide an appropriate quality of water for SunCatcher mirror washing and to meet the standards for on-site drinking water. An important feature of the SunCatcher system is that water is only consumed for mirror washing. To comply with Environmental Protection Agency requirements and Imperial County air pollution regulations, water will be used for dust control during construction. When fully operational, the approximately 6,500-acre Project will use approximately 33 acre-feet of water per year. This amount is equivalent to the annual water consumption of approximately 33 households, based on water consumption in Southern California.

1.4 ALTERNATIVES

The Applicant evaluated a range of potential alternatives to the proposed Project. The site selection for the Project was based on a detailed evaluation of the key criteria required for a large-scale, concentrating solar power project of its type. Input was obtained on alternative locations through discussions with the CEC, the California Independent System Operator, and the BLM. The key criteria are:

- site suitability (solar resource size and grade),
- site availability (ability to lease or obtain a BLM grant of right-of-way),
- proximity to critical infrastructure (suitable transmission lines and water supply, etc.),
- suitability in relation to environmental and cultural sensitivities,

- consistency with existing jurisdictional policies, and
- the need for the Project to be economically viable by being in proximity to suitable infrastructure and having land that is available to be leased or owned at reasonable cost.

The Applicant has had several meetings with the CEC and the BLM and has performed substantial analysis to identify appropriate site locations. The criteria described above were used to evaluate the suitability of alternative sites for solar power development.

The physical attributes of the Project Site meet the key criteria required for site selection. The Project is located in an undeveloped area of Imperial County in Southern California that consists primarily of undeveloped desert. The site is generally flat and slopes to the northeast. Although the surrounding regional landscape is predominately desert, irrigated land is used for agricultural purposes a few miles to the east of the site. IID will supply water to the Project from the nearby Westside Main Canal. The site is bounded to the north by the Union Pacific railroad (which is located immediately south of Evan Hewes Highway) and to the south by Interstate 8. The eastern side of the site is located approximately 1 mile to the west of Dunaway Road. These physical boundaries are relevant in that they form barriers against the rest of the wider desert, thereby assisting in mitigating against wider impacts.

The alternatives considered included the “No Project” or “No Action” Alternative. This alternative was considered and rejected because it would not fulfill the Project objectives of helping to meet the renewable electric power requirements of the state of California.

A second engineering alternative to the Project would be to limit the capacity of the Project to a maximum of 300 MW. Under this alternative, only Phase I of the Project would be constructed. The 300-MW Alternative would consist of approximately 12,000 SunCatchers, with a net generating capacity of 300 MW occupying approximately 2,600 acres of land. The 300-MW Alternative would transmit power to the grid through the existing SDG&E Imperial Valley Substation.

The 300-MW Alternative would have ancillary features and infrastructure similar to those of the larger 750-MW Project, including a water supply pipeline, a transmission line, road access, operations facilities, and a substation. Some of these features would be smaller and potentially have less of an overall impact under the 300-MW Alternative, as the capacity of the Project would be reduced and there would be no need to accommodate additional future generation. However, because the smaller 300-MW Alternative would not supply as much renewable energy as the proposed 750-MW Project, the ability of the state of California to meet its obligations under the RPS Program would be diminished. Also, even though a smaller project would occupy less land and would require less financing to construct, the benefits of a smaller project would likely be smaller than a directly proportional size reduction because much of the infrastructure would still need to be developed. In addition, a smaller project would cost more per kilowatt of capacity, resulting in a higher cost of electricity for San Diego ratepayers. Finally, a smaller Project would not maximize the use of the solar resources available in the area.

A third engineering alternative that was considered was to construct a 900-MW Project in two phases, on approximately 7,650 acres of land. In the 900-MW Alternative, Phase I would again consist of up to approximately 12,000 SunCatchers with a net capacity of over 300 MW. However, under the 900-MW Alternative Phase II would further expand the Project up to a total size of approximately 36,000 SunCatchers with a total generating capacity of 900 MW. This

900-MW Alternative was demonstrated to have significant potential environmental impacts (specifically in relation to cultural resources in the eastern portion of the site) that precluded its selection as a viable alternative. Although an additional 450 MW can be developed without significantly impacting cultural resources, as proposed in the 750-MW Project, the 600-MW Phase II that would be required under the 900-MW Alternative would require developing further east and therefore would have the potential to impact cultural resources. The 900-MW Alternative was therefore rejected on these grounds.

Alternative locations for the Project Site were also evaluated, with an attempt to mitigate the visual impact of the Project. However, after applying the site selection criteria to the alternative locations, the Applicant concluded that the proposed Project Site was the only viable alternative. The existing industrial activity in the area, which includes a railway, a main road, and the Plaster City Gypsum Wallboard Manufacturing Facility, serves to lessen the visual impact that would otherwise occur as a result of the Project. Despite these existing industrial activities, the Project will still impact the viewshed from Interstate 8. The visual aspect of the area will inevitably be altered to that of a regional center for utility-scale solar thermal power production. As a result, a further potential impact is that the site and area may become a tourist attraction and an object of educational visitation. Appendix C, Property Owners Within 1,000 Feet of Project Site, has been provided to aid in the dissemination of information about these and other potential impacts.

In addition to the engineering alternatives that the Applicant evaluated, as described above, SDG&E considered several other renewable technology alternatives through its competitive solicitation. The SunCatcher technology was chosen due to its ability to meet SDG&E's least-cost, best-fit criteria and the other criteria of the California Public Utilities Commission.

The Applicant considered a number of alternative water supplies for the Project. Obtaining water from the local Ocotillo Wells groundwater aquifer was ruled out as a viable option, as it is for residential use only and is already in a deficit situation due to overuse and lack of recharge. The Coyote Wells groundwater aquifer is also in a deficit situation. Therefore, the Applicant will obtain the Project water supply from the IID water canals in the area. This alternative provides sufficient water volume and quality, it satisfies California water policy, and it is safe and reliable. Trucking water to the Project Site is a short-term water supply option if the main water supply source is interrupted.

1.5 TYPICAL AREAS OF ENVIRONMENTAL INTEREST

The development of this Project will have the potential for both positive and negative effects. Some of the positive effects include:

- the production of renewable power,
- minimal greenhouse gas emissions,
- minimal air emissions,
- minimal use of water and toxic and hazardous materials, and
- creation of new jobs.

The Project also helps meet local and state targets and requirements for renewable energy and state goals for reduced greenhouse gas emissions. The Applicant acknowledges that the development of a large-scale solar power Project has the potential for negative effects because of the large land disturbances associated with it. The Applicant will develop the Project so as to avoid, minimize, and/or mitigate potential effects, where feasible. The following discussion summarizes the key areas that were evaluated as part of this AFC.

1.5.1 Air Quality

Overall, the Project will have minor air emissions of regulated air pollutants and greenhouse gases, which is a significant improvement relative to the air emissions associated with fossil fuel power generation. During the construction and operation of the Project, air quality will have the potential to be impacted by construction and vehicular activity. However, these air emission effects will be temporary and will be controlled by enacting appropriate mitigation measures (e.g., soil stabilizers, water for dust control, etc.). Any potential air effects as a result of the Project construction and operation activities could be considered negligible in comparison to the wider benefits the Project will have for the state of California.

1.5.2 Biological Resources

The biological resources evaluation of the Project involved conducting extensive field and habitat surveys to characterize special-status plants and wildlife. The Project Site is a low-elevation desert area consisting primarily of Sonoran Desert creosote bush scrub vegetation. The Project Site is in a location that has a history of mining operations and claim filings dating to 1908. These activities have resulted in disturbances in various areas, and in some cases the same area has been disturbed several times. The Applicant intends that proposed mitigation measures will ensure that potential effects to sensitive species and wildlife will be considered negligible.

Given the design of the SunCatcher systems, which will stand on individual pedestals, some vegetation will need to be trimmed and removed during construction for access roads and SunCatcher foundations, though much of the vegetation will be left intact. After construction is completed, some of the cleared areas will be allowed to re-vegetate so that the long-term effect of the construction will be reduced.

1.5.3 Cultural Resources

Past and present actions within the region have already resulted in effects to cultural resources. These actions have included highway/roadway construction, commercial and residential development, and off-highway vehicle use. The development of the Project has the potential to result in direct effects to previously undisturbed cultural resources because of earth-moving activity. These potential effects will be minimized through the use of properly designed and implemented mitigation programs. Furthermore, as previously discussed in Section 1.4, Alternatives, the Applicant elected to exclude part of an adjoining area of the Project Site from consideration to avoid effects to cultural resources.

1.5.4 Land Use

Land use within the area of the Project Site is dominated by open space/public land administered by the BLM and to a lesser extent by recreational, military, and community uses, with small portions in industrial and urban uses. Past and present activities, including residential and commercial development, off-highway vehicle use, infrastructure development (highways and roads), and agricultural activities, have resulted in changes to land use in what was a relatively undeveloped region. According to Imperial County LORS, solar energy conversion is an allowable use for the Project Site. As part of this process, the BLM will require the approval of a land use amendment and the issuance of a right-of-way grant.

1.5.5 Socioeconomics

The socioeconomic environment within the study area is dominated by small urban centers (El Centro and Ocotillo) and military, recreational, and agricultural activities. It is expected that a large portion of the construction and operation workforces will come from the vicinity of the Project, with the remainder coming from neighboring areas and states. It is anticipated that the Project will be operated by approximately 160 full-time employees when fully operational. However, during construction up to 700 construction and building trades personnel will work on-site. The permanent employees associated with the operation of the Project are expected to have a significant beneficial effect on the local economy because of the new jobs created and because of the potential increase in tax revenues resulting from the economic activities of the Project's employees.

Based on discussions with local officials, the Project is not anticipated to affect local utilities or emergency services.

1.5.6 Visual Resources

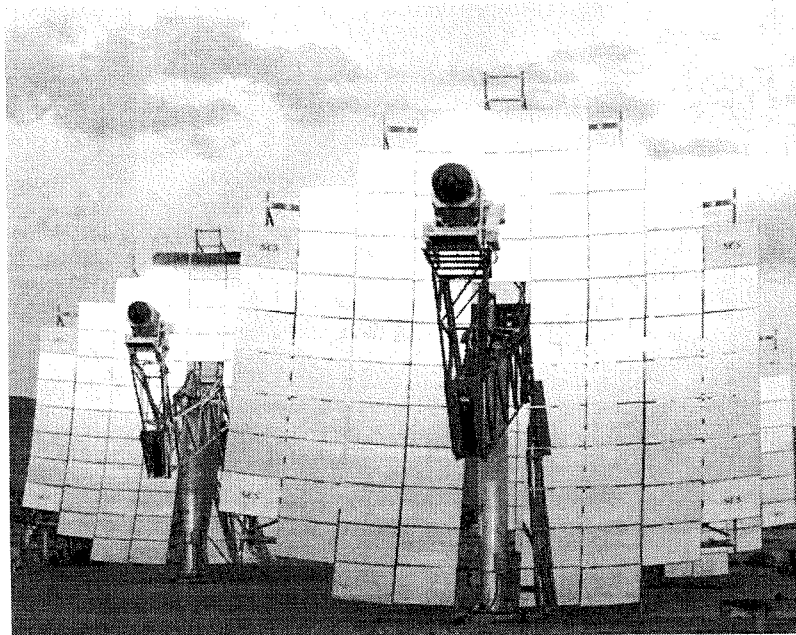
Visual resources in the area of the Project Site have been affected by past and present actions, including highway/roadway construction and residential and commercial development. The viewshed of the area has already been modified with the presence of the existing transmission lines, Interstate 8, a railway line, and property fencing in the immediate vicinity of the Project. Also, the Plaster City Gypsum Wallboard Manufacturing Facility forms a dominant feature of the landscape.

The Project would be clearly visible from Interstate 8 and would have an effect on the viewshed from the road. The form, line, and texture of the visual environment will change as a result of the Project. The visual character of this area will change from open space to a regional center for large-scale solar power production. This change will be perceived differently by different people. To some people, the Project may detract from the desert environment, but to other people the Project may be a point of positive visual interest. As one of the first large-scale projects of its kind in California, the solar technology has the potential to become a tourist attraction, drawing visitors from the energy industry, the environmental community, and government/political figures who seek direct personal experience of progressive renewable energy solutions.

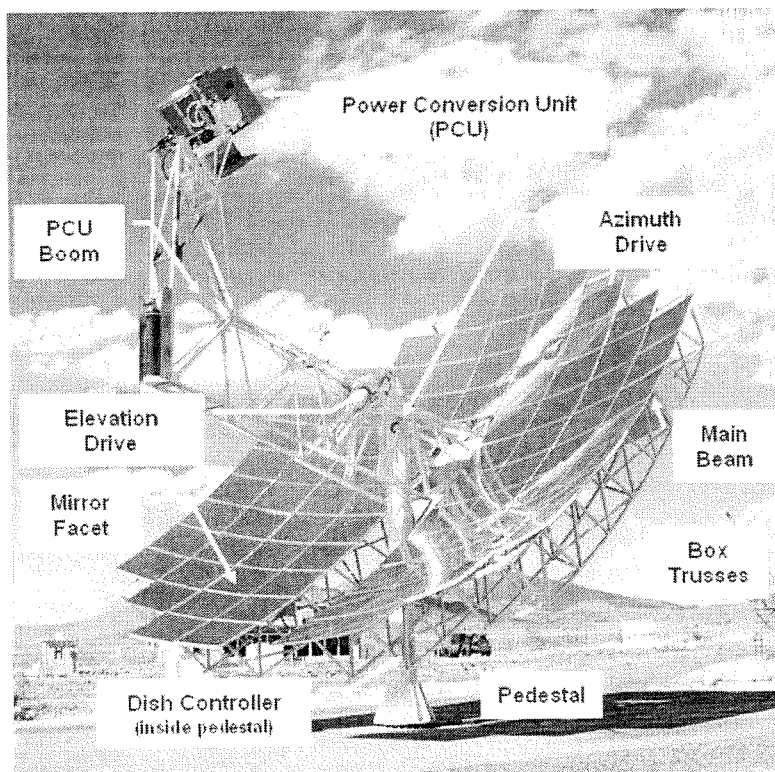
1.6 SUMMARY

The Project will provide the state of California with large-scale, renewable, solar-powered electricity that is generated with minimal air and greenhouse gas emissions. The Project will help both the state of California and SDG&E meet the current and future requirements of the RPS Program and current and future greenhouse gas emission reduction goals. The Applicant acknowledges that the development of large-scale renewable energy Project has the potential for both positive and negative effects. As is demonstrated in this AFC, the Applicant has endeavored to minimize any potential negative effects wherever possible.

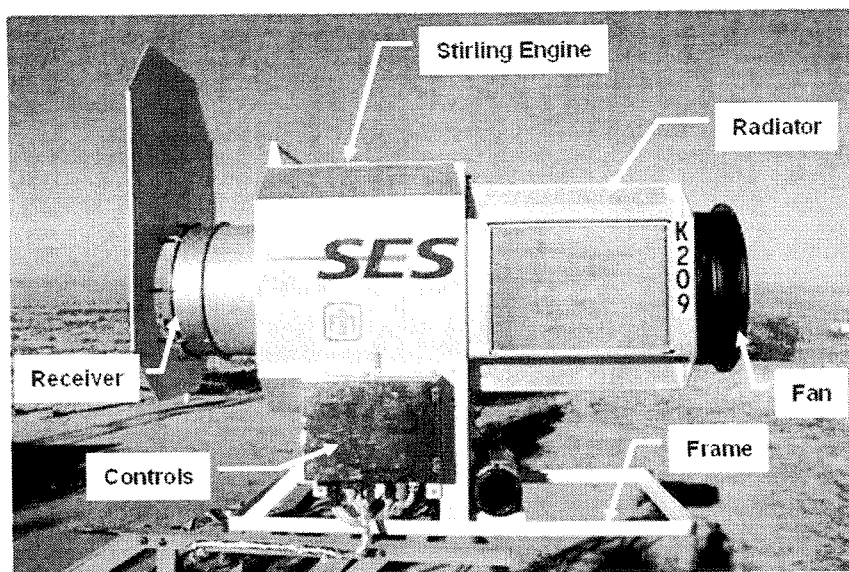
Photograph 1-1: SunCatcher in Operation

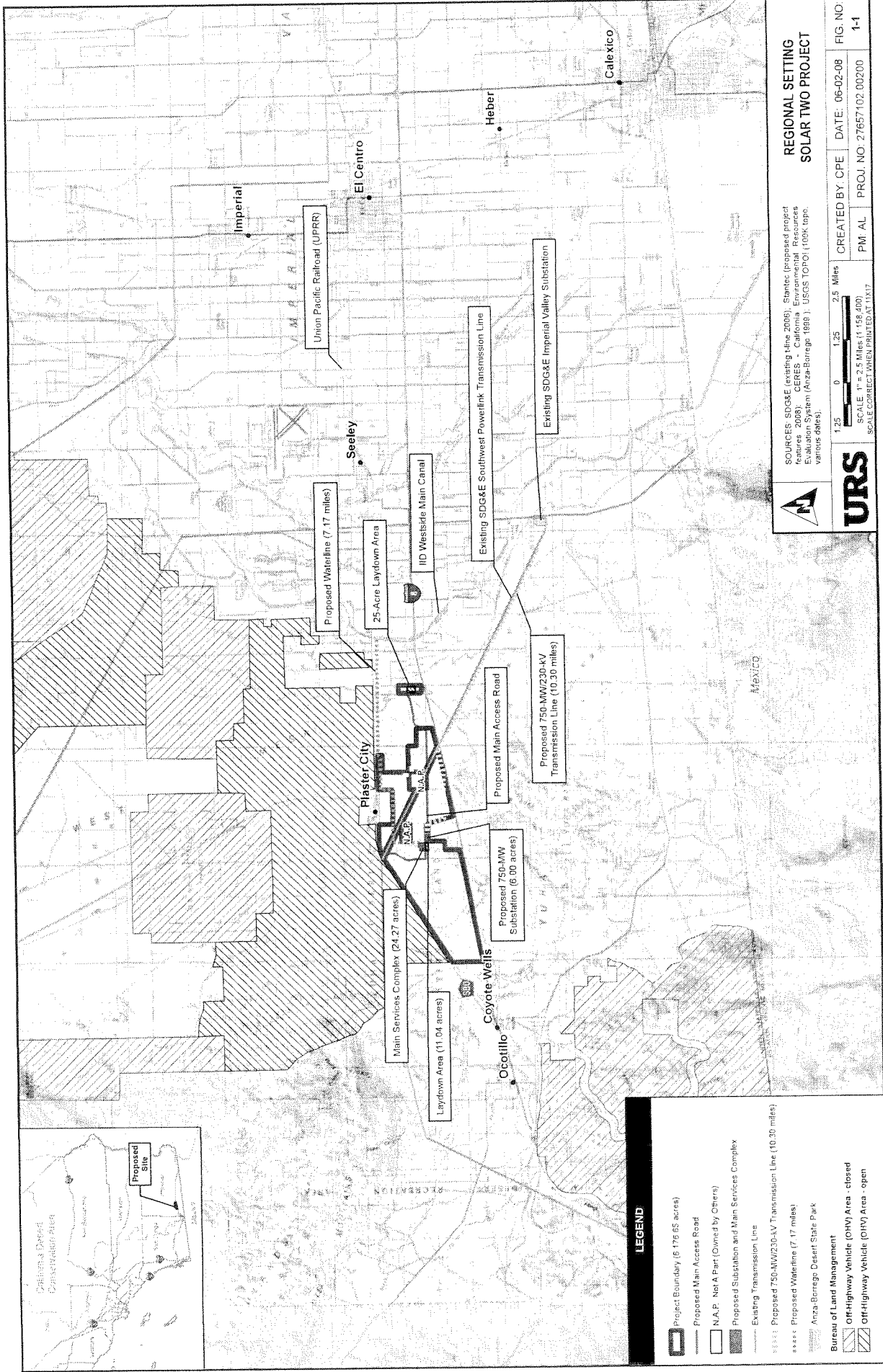


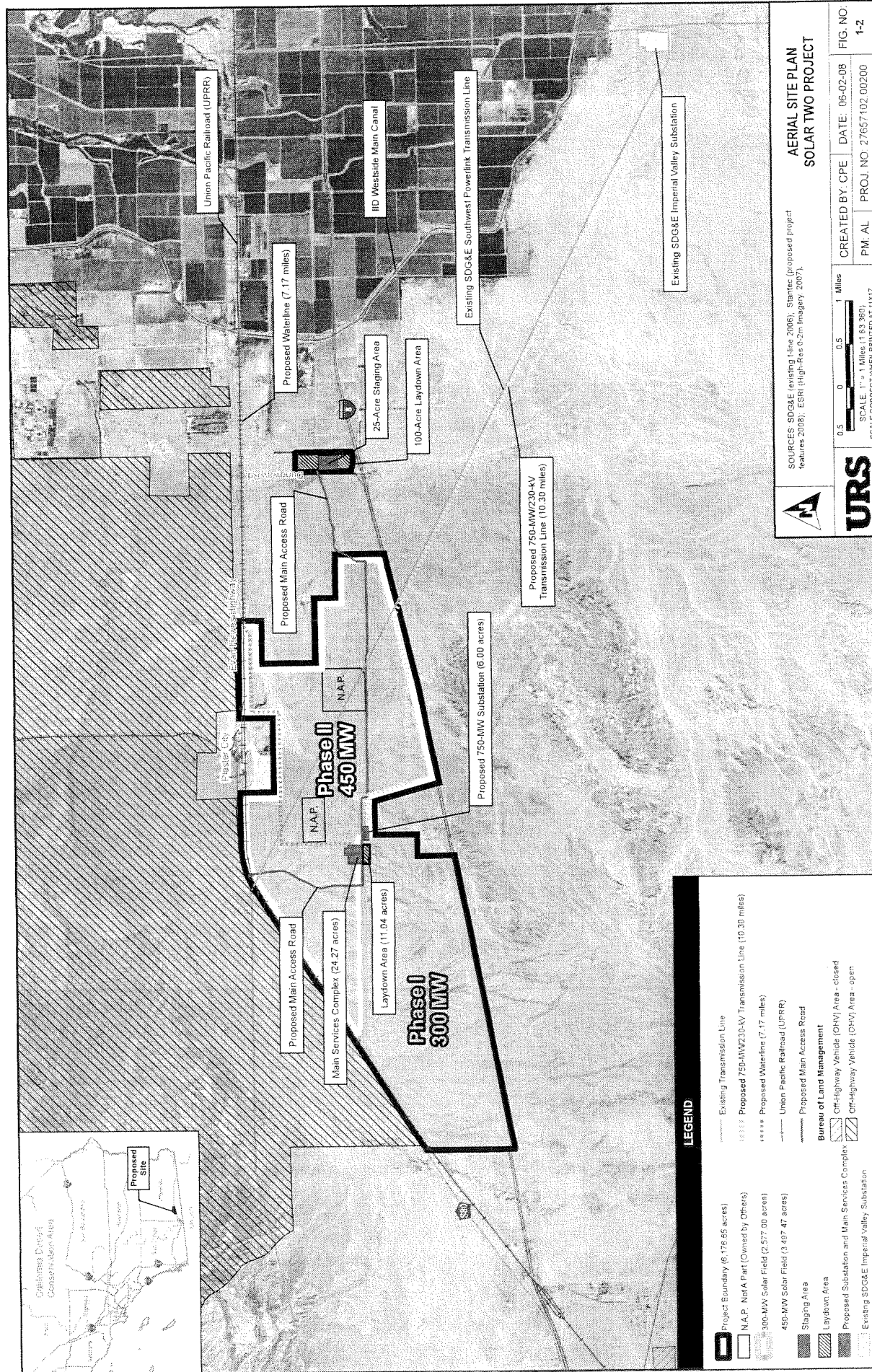
Photograph 1-2: SunCatcher System



Photograph 1-3: Power Conversion Unit







AERIAL SITE PLAN SOLAR TWO PROJECT

SOURCES: SDG&E (existing line 2006), Starlink (proposed project features 2008), ESR (high-res 0.2m imagery 2007).

CREATED BY: CPE	DATE: 06-02-08	FIG. NO: 1-2
PM: AL	PROJ. NO: 27657102.00200	

0.5 1 Miles
SCALE: 1" = 1 Miles (1:63,360)
SCALE CORRECT WHEN PRINTED AT 11x17

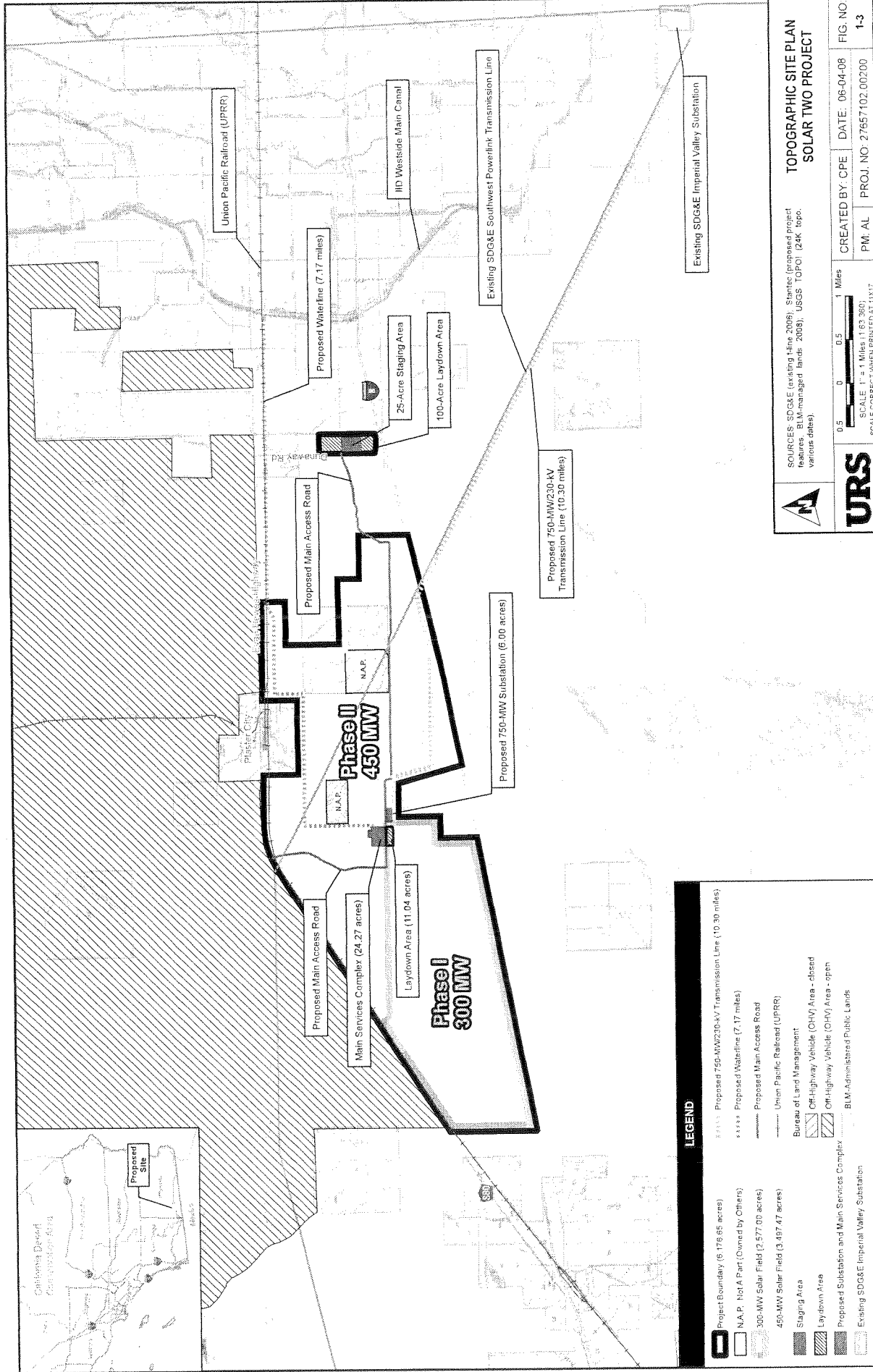


EXHIBIT 18

Potential for Renewable Energy in the San Diego Region

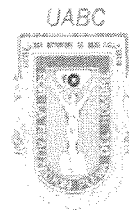
August 2005



SAN DIEGO STATE
UNIVERSITY
Center for Energy Studies



San Diego
REGIONAL
ENERGY
OFFICE



Power Towers

The molten-salt power tower was developed specifically for application in utility-owned solar power stations. These are potentially the most efficient and lowest cost solar power systems. The key feature is the molten-salt working fluid, which provides efficient, low-cost thermal energy storage. This allows solar plants to be designed with high annual capacity factors or used to dispatch power to meet summer and winter peak loads. This technology has not yet been demonstrated in a commercial operating environment. As a result, significant uncertainty exists in the cost and performance of this system. A recent study by Black & Veatch¹ classified this technology as being at a pre-commercial status and thus is not yet a candidate for deployment in the commercial power market environment. A number of other power tower configurations are under development. We believe these are either less attractive or less commercially ready than the molten-salt technology.

Parabolic Dishes

Parabolic dishes with Stirling engines are considered attractive because of their modular nature (25-kWe units) and their demonstrated high solar-to-electric efficiency (~30%). Their modular nature means that plants of virtually any size could be built or expanded. These systems do not require water for cooling, which is another benefit in the desert southwest. Unfortunately, the solar application of the Stirling engine was intended to leverage automotive or other applications of this engine, and this in turn would lead to improved engine reliability and reduced cost. The other applications have not occurred to date, and they seem unlikely at present. The Black & Veatch study also found dish technology to be at a pre-commercial status and thus is also not yet a candidate for commercial deployment. Current systems have not demonstrated the level of reliability considered necessary for commercial system.

Concentrating Photovoltaics

Several vendors are currently developing concentrating photovoltaic (CPV) systems. Similar to dish/Stirling systems these systems are considered attractive because of their modular nature (25 to 50kWe units) and their potential for high solar-to-electric efficiency (>30%). These systems also do not require water for cooling. Manufacturers are currently providing CPV systems, but only at a few MWe per year and they are still have limited operational experience. Costs are currently somewhere between parabolic trough and flat plate PV. It is our judgment that CPV systems could be attractive for small distributed systems (25kWe and above). It is not clear at what size the economics of a small trough plant becomes the preferred option.

NREL's Recommendation for CSP

Based on the assessment of CSP technologies above, parabolic trough technology is considered the only large-scale (greater than 50 MWe) CSP technology that is available for application in a commercially-financed power project now and in the near future (5 years). The remainder of this report thus focuses on parabolic trough technology.

¹ Black & Veatch, 2005, "New Mexico CSP Feasibility Study, Task 7 – Development Scenarios," Presentation to New Mexico CSP Task Force, January 20, 2005.

EXHIBIT 19

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

In the Matter of the Application of San Diego Gas & Electric Company (U 902-E) for a Certificate of Public Convenience and Necessity for the Sunrise Powerlink Transmission Project	Application 06-08-010 (Filed August 4, 2006)
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**PHASE I DIRECT TESTIMONY
OF DR. BARRY BUTLER
ON BEHALF OF CONSERVATION GROUPS**

Justin Augustine
Steven Siegel
Center for Biological Diversity
San Francisco Bay Area Office
1095 Market St., Suite 511
San Francisco, CA 94103
Telephone: 415-436-9682 ext. 302
Facsimile: 415-436-9683
E-Mail: jaugustine@biologicaldiversity.org

Dated: June 1, 2007

Testimony of Dr. Barry Butler on Dish/Stirling Solar Technology

1. INTRODUCTION

My name is Barry L. Butler, PhD. As more fully outlined in my resume, Appendix A, I have a PhD in Materials Science and am the former vice president and manager of SAIC's Solar Energy Products Division. I joined the Solar Energy Research Institute, the predecessor to the National Renewable Energy Laboratory, in 1978, soon after it began operations. Prior to that time I worked at Sandia National Laboratory specializing in solar optical materials. I wrote the chapter on cooperative solar thermal commercialization activities in the book "Implementation of Solar Thermal Technology" published by MIT Press in 1996. I have written or co-authored over 10 technical papers on all aspects of dish/Stirling solar technology development. I was the president of the Concentrating Solar Power Division of the Solar Energy Industries Association from 1998 to 2002, and I am the owner of Butler Sun Solutions, a firm specializing in the design and sales of solar hot water heating systems.

2. BACKGROUND

San Diego Gas and Electric (SDG&E), a company owned by Sempra Energy, has filed an application to the CPUC claiming a 150 mile, 1000 MW transmission line is needed to import energy into San Diego County to ensure the reliability of the regional transmission system on peak demand days, and has further suggested the transmission line is needed to encourage the development of renewable power in Imperial Valley. SDG&E has signed a power purchase agreement (PPA) with Stirling Energy Systems (SES), Phase I of which is for a 300 MW dish/Stirling array, a total of 12,000 of their 25

Testimony of Dr. Barry Butler on Dish/Stirling Solar Technology

kW dish/Stirling systems, in Imperial County that must be delivered in increments between 2008 and 2010, as is stated in the CPCN (p. III-11):

The Agreement with SES contemplates the purchase by SDG&E of up to 900 MW of new solar related energy from SES in three phases. Phase 1 consists of 300 MW scheduled for delivery in the 2008 to 2010 timeframe. While the first phase will provide 300 MW when all construction is completed, the capacity will be added in increments over the 2008 through 2010 period. Phase 2 project consists of an additional 300 MW in the 2011 to 2012 timeframe. SDG&E also has a right of first refusal for a third phase for another 300 MW phase.

According to the SDG&E, commercial production is expected to begin in 2008.

The economic terms of the contract, specifically the \$/kwh price that SDG&E will pay SES for the power, is unknown.

There are currently six prototype 25 kW Stirling dishes in operation at Sandia National Laboratory. I have been asked to opine on the reliability and cost of SES dish technology and whether it is feasible or realistic to expect that SES can meet the contract schedule defined by SDG&E.

3. DEVELOPMENT HISTORY OF DISH STIRLING TECHNOLOGY

I co-authored a 2003 paper that includes a brief history of the development of dish Stirling technology.¹ I have excerpted the following summary of dish Stirling technology from that paper.

Over the last 20 years, eight different Dish-Stirling systems ranging in size from 2 to 50 kW have been built by companies in the United States, Germany, Japan, and Russia. The first of the historical systems, the 25-kW Vanguard system built by ADVANCO in Southern California, achieved a reported world record net solar-to-electric conversion efficiency of 29.4%. In 1984, two 50-kW Dish-

¹ T. Mancini, P. Heller, B. Butler, B. Osborn, W. Schiel, V. Goldberg, R. Buck, R. Diver, C. Andraka, J. Moreno, *Dish-Stirling Systems: An Overview of Development and Status*, Journal of Solar Energy Engineering, Vol. 125, pp. 135-151, May 2003.

Testimony of Dr. Barry Butler on Dish/Stirling Solar Technology

Stirling systems were built, installed, and operated in Riyadh, Saudi Arabia, by Schlaich-Bergermann und Partner of Stuttgart, Germany.

A third Dish-Stirling system was built by McDonnell Douglas Aerospace Corporation (MDAC) in the mid 1980s and, when MDAC discontinued development of the technology, the rights to the system were acquired by the Southern California Edison Company (SCE). SCE operated the system from 1985 to 1988. Stirling Energy Systems (SES) of Phoenix, Arizona, acquired the technology rights and system hardware in 1996 and have continued development of the system. In 1991, Cummins Power Generation, working under costshared agreements with the U.S. Department of Energy and Sandia National Laboratories, started development of two Dish-Stirling systems: a 7-kW system for remote applications and a 25-kW system for grid-connected power generation. Cummins was innovative in its Dish-Stirling systems, incorporating advanced technologies into the designs. . . The two Cummins programs made progress, but were terminated in 1996 when Cummins' parent company, Cummins Engine Company, realigned business along its core area of diesel engine development.

Dish-Stirling systems have demonstrated that they are capable of producing electricity for the grid and for remote power applications. Technology development needs are for low-cost components and systems that can operate unattended at very high levels of reliability.

SES acquired the intellectual and technology rights to the McDonnell Douglas concentrator and the license to manufacture the USAB (now Kockums) 4-95 Stirling engine based power conversion unit (PCU) in 1996.

The (SES) systems are continuously monitored and repaired whenever a problem occurs. Consequently, they have demonstrated excellent availability, greater than 98%, during the most recent 1,000 hr of operation.

I was the SAIC project manager for a dish/Stirling design that was in competition with the SES design. By 2002, SAIC had also demonstrated relatively high availability of the system for periods of time. However, the "mean time between failure" was approximately 40 hours. Major reliability problems with the SAIC Stirling engine included hydrogen leakage through joints and seals, internal engine seal leakage, swashplate actuator stalls, and heater head braze joint hydrogen leaks. That means that

Testimony of Dr. Barry Butler on Dish/Stirling Solar Technology

on average once every 40 hours a problem of some type required shut down and maintenance. Nearly continuous maintenance was necessary to keep the system “available” to generate electricity. SES has also demonstrated very high availability, though this has been achieved by a program of continuous maintenance. In 2002, SES and SAIC both had dish/Stirling units operating at the University of Nevada – Las Vegas. Power output was greater for SES than SAIC. Both SAIC and SES conducted maintenance on a nearly continuous basis to keep the units available for electricity production.

Dish/Stirling is not cost-competitive with conventional power generation, or other forms of renewable power generation such as wind and solar, at this time. Wind and geothermal are fully commercial renewable energy technologies with a cost of energy of approximately 5¢ US/kWhr each.² As noted in the 2003 Journal of Solar Energy Engineering paper I co-authored:³

In the U.S., niche markets for Dish-Stirling power generation depend on federal or state government subsidies, required to close the gap between the current cost of power from these systems (~30¢ US/kWhr) and the price that the market is willing to pay (~6¢ US/kWhr), a difference of 24¢ US/kWhr.

Even at the relatively low production rate of 50 MW/yr (~2,000 25-kW systems or 5,000 10-kW systems) and at an O&M cost of 1–2¢/kWhr, the cost of electricity from Dish-Stirling systems will be 15–20¢/kWhr enabling entry into some village and remote-power markets. As system costs fall and reliability improves, it is reasonable to expect levelized energy costs of less than 10¢

² R. Caputo, B. Butler, *Solar 2007: The Use of “Energy Parks” to Balance Renewable Energy in the San Diego Region*, accepted for publication, American Solar Energy Society, 2007 Annual Conference, Cleveland, July 2007.

³ T. Mancini, P. Heller, B. Butler, B. Osborn, W. Schiel, V. Goldberg, R. Buck, R. Diver, C. Andraka, J. Moreno, *Dish-Stirling Systems: An Overview of Development and Status*, Journal of Solar Energy Engineering, Vol. 125, pp. 135-151, May 2003., p. 139.

Testimony of Dr. Barry Butler on Dish/Stirling Solar Technology

US/kWhr, which will expand the markets to distributed generation and demand-side applications.

A “mean time between failure” between 2,000 and 10,000 hours must be proven before dish/Stirling can be incorporated into utility-scale installations.⁴ The current “mean time between failure” is a few hundred hours. This means a great deal of time, effort, and money must be spent on maintenance. This drives up the cost of operating a dish/Stirling unit. The commercial viability of the Stirling system is unproven at this time.

4. PILOT INSTALLATION IS NEXT LOGICAL STEP IN DISH/STIRLING DEVELOPMENTAL PROGRESSION

The 1 MW pilot project being developed by SES for SCE is a good example of a necessary and prudent incremental step to ensure all the technical deficiencies in the first generation production model are worked-out before scaling-up to arrays involving many 1,000s of individual dishes. It is also instructive that SCE, a company with extensive experience with dish/Stirling technology and the company that sold the technology to SES, is requiring the successful deployment of a 1 MW pilot project before scaling-up to a utility-scale installation.

SDG&E has no experience with the operation of dish/Stirling technology, and is proposing to go straight from the prototype to a utility-scale installation. Few or none of the benefits of the 1 MW pilot test will be available to SES as it moves to full commercial scale production to satisfy the SDG&E contract(s), as the 1 MW pilot has not yet begun operation and full commercial production must begin in a matter of months if SES hopes

⁴ R. Caputo, B. Butler, *Solar 2007: The Use of “Energy Parks” to Balance Renewable Energy in the San Diego Region*, accepted for publication, American Solar Energy Society, 2007 Annual Conference, Cleveland, July 2007.

Testimony of Dr. Barry Butler on Dish/Stirling Solar Technology

to meet the 2010 deadline established in the SDG&E contract. This is neither prudent nor possible unless the technical risks of the operation and maintenance are quantified and then apportioned between the federal government, investors, SES and SDG&E. The SCE 1MW project is the way to quantify the risks, before moving to 10MW then on to 100MW. Without these risks quantified and apportioned, investors who are willing to shoulder all of the risks for a meager reward must be found.

5. DISH/STIRLING IS A PRE-COMMERCIAL TECHNOLOGY

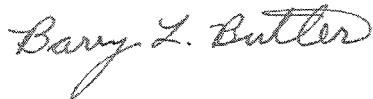
The San Diego Regional Renewable Energy Study Group addressed dish/Stirling in its August 2005 *Potential for Renewable Energy in the San Diego Region*.⁵ Several of the co-authors of this report are SDG&E staff. Dish/Stirling is identified as pre-commercial in this study, based primarily on analyses conducted by the National Renewable Energy Laboratory and Black & Veatch.

I concur with this assessment in the *Potential for Renewable Energy in the San Diego Region*. My opinion is that dish/Stirling technology holds much promise. By 2020, the technology could be a significant player on a commercial scale in the concentrated solar power category. However, there is no possible way that dish/Stirling solar can move from high cost prototype models with substantive reliability concerns to large-scale production of high reliability low-cost commercial models by 2008 and full operation of a 12,000 dish, 300 MW array by the end of 2010. An entire step wise development 1MW, 10MW, 100MW with installed cost, reliability and operation & maintenance costs assessed over a year of operation at each step is necessary to move

Testimony of Dr. Barry Butler on Dish/Stirling Solar Technology

from current prototypes to the large-scale commercial plants contemplated in the power purchase agreements between SDG&E and SES.

I declare under penalty of perjury this testimony and attachment are, to the best of my knowledge, true and correct.



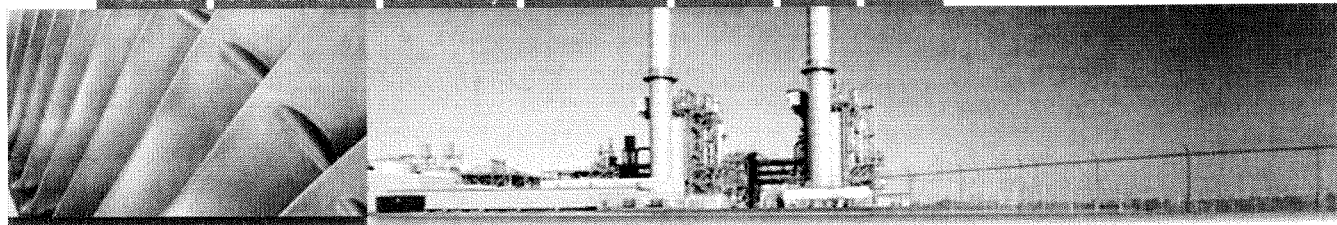
Signed:

Date: 5/31/2007

Barry L. Butler, PhD
811 Academy Dr.
Solana Beach, CA 92075
858-259-8895

⁵ San Diego Regional Renewable Energy Study Group, *Potential for Renewable Energy in the San Diego Region*, August 2005 (www.renewablesrg.org).

EXHIBIT 20

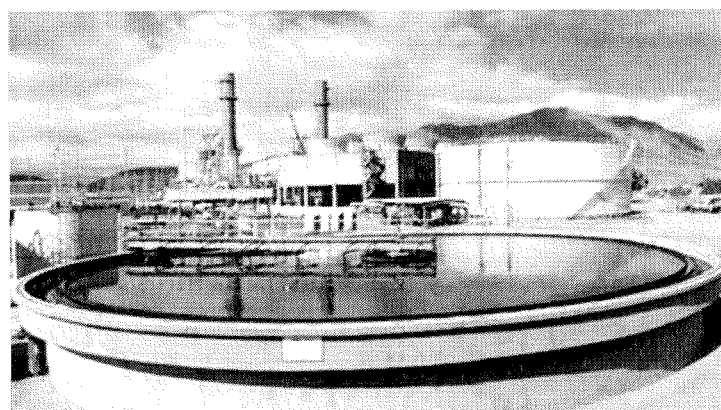

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OUR BUSINESSES

Power plants in operation >>

[El Dorado Energy](#)
[Elk Hills Power](#)
[Mesquite Power](#)

Termoeléctrica de Mexicali

[Community](#)
[Environment](#)
[Development projects >>](#)
[Español](#)


Sempra Generation built a \$350 million, 625 megawatt (MW) electrical generating plant in Mexicali, Baja California, Mexico, that was designed as one of the cleanest and most efficient power plants in North America. The plant, which only uses clean-burning natural gas as a fuel source, features the latest in air-emissions-reduction technologies.

PLANT OWNER:	Termoeléctrica De Mexicali is a wholly owned subsidiary of Sempra Energy.
PLANT LOCATION:	TDM is about 18 kilometers west of Mexicali, next to the Mexicali-Tijuana highway and about three miles south of the Imperial Valley/Mexicali border.
PLANT TYPE:	Combined-cycle; fueled using natural gas
TOTAL GENERATING CAPACITY:	625 MW, or enough electricity for about 470,000 area homes. (Electricity use varies by region, depending on the weather and other conditions.)
ESTIMATED COST:	About \$350 million
OPERATIONAL START DATE:	Summer 2003
TARGETED CUSTOMER BASE:	TDM operates under the classification of an Independent Energy Producer, connecting to the U.S. electrical system via a nine-mile (15-kilometer) transmission line.

EXHIBIT 21

Commission stated in D. 97-12-090 at registered ESPs are to follow the standards of Section 394.5 until such time further details are adopted by the Commission. Second sentence of Section 394.2(b) states that a customer could file two separate, one with the Commission and one with the court, so long as the same claim is not litigated in two forums. Our decision today does not state that is what the Legislature intended. Provisions of Section 392(a) as added by the Commission originally contained in former Section 392 by AB 1890.

are "Other Charges," a description of which are to be included in the Section 394.5

Standard bill format requirements shall not apply to master-meter customers. Standard requirements for those customers deferred in a future decision addressing meter and direct access issues.

Section 453 provides in pertinent part:

(a) A public utility shall, as to rates, charges, fees, penalties, or in any other respect, make no discrimination on the basis of race, ethnicity, or reference or advantage to any corporation or subject any corporation or person to discrimination or disadvantage.

(b) A public utility shall prejudice, disadvantage, or require different rates or deposit from a person because of race, religious creed, sex, national origin, ancestry, physical handicap, marital status, or change in marital status.

(c) A public utility shall establish or maintain an unreasonable difference as to rates, charges, fees, facilities, or in any other respect, between localities or as between classes of

consumer advisory could also include a list of other issues that consumers should be aware of in selecting an ESP.

Re Pacific Enterprises

Additional applicants: Enova Corporation;
Mineral Energy Company; B Mineral Energy
Sub; G Mineral Energy Sub

Decision 98-03-073
Application 96-10-038
184 PUR4th 417

California Public Utilities Commission
March 26, 1998

ORDER approving the merger of the corporate parents of two energy utilities, subject to conditions designed to mitigate the market power of the merged entity.

Commission authorizes Pacific Enterprises — a public utility holding company and corporate parent of a natural gas utility, Southern California Gas Company (SoCalGas) — to merge with Enova Corporation — an energy management company and corporate parent of an energy utility, San Diego Gas and Electric Company (SDG&E). A newly formed entity, Mineral Energy Company, will become the parent of, and directly control, Pacific Enterprises and Enova Corporation. SoCalGas and SDG&E will become second-tier subsidiaries of Mineral Energy, but will not merge with each other or any other entity. The utilities will remain separate entities with their own commission-approved capital structures and will continue to be regulated by the commission in their tariffed utility services.

Commission finds that the merger raises vertical market power concerns because it would consolidate the intrastate gas operations of SoCalGas with the electric operations of SDG&E. The commission concludes that divestiture of SDG&E's gas-fired generation and divestiture of SoCalGas's option to purchase the California assets of the Kern River and Mojave pipelines are necessary to eliminate the incentive of the merged company to benefit SDG&E's generation to the detriment of competing generation, to mitigate the loss of SDG&E as a potential bypass candidate, and to increase competition.

To further mitigate market power, the merger applicants must abide by the merger-approval conditions imposed by the Federal Energy Regulatory Commission (FERC), including adherence to the requirements of FERC Order 497, which is intended to prevent affiliate abuses. The utilities also must abide by marketing affiliate transaction rules established by the California commission. However, utility-to-utility affiliate transactions are partially exempted from affiliate transaction rules to avoid the unnecessary loss of efficiencies that can be realized through the integration of utility functions.

Commission rejects claims that the merger will concentrate the horizontal market power of SDG&E in the southern California electricity market to the detriment of competition. It explains that the relevant market cannot be characterized as concentrated in light of the fact that competition for electricity retail sales is expected from some 169 firms, including strong nationwide firms with experience in energy trading.

Commission declines to condition its approval of the merger on the divestiture of gas transmission, storage, and distribution plant, finding that divestiture of those assets would be an unduly drastic market power mitigation measure that would help competitors rather than competition while potentially harming residential and small commercial customers.

The merger is expected to produce \$288 million in net savings, which will be distributed equally to ratepayers and shareholders over five years. (After certain adjustments ratepayers will receive \$175 million.) In calculating the net merger savings available for sharing, the commission finds that inasmuch as the merger was undertaken for the benefit of shareholders, costs incurred to effectuate the merger should be borne primarily by shareholders. Accordingly, the commission declines to deduct from gross merger savings such costs as investment banking fees and employee retention costs that produce no, or only derivative, benefits to ratepayers.

VIII. Findings of Fact	422
IX. Conclusions of Law	431
ORDER	431
Attachment A	
Attachment B	

BY THE COMMISSION:

OPINION

Summary

This decision approves the merger of Pacific Enterprises and Enova Corporation. It finds that savings from the merger are \$288 million to be computed over five years and distributed to ratepayers and shareholders, 50/50, over five years. (Because of adjustments ratepayers will receive \$175 million.) It finds that to mitigate the effects of San Diego Gas & Electric Company's (SDG&E) loss as a potential competitor and Southern California Gas Company's (SoCalGas) market power, SDG&E should sell its gas-fired generation and SoCalGas should sell its options to acquire the California portions of the Kern River pipeline and the Mojave pipeline. The decision approves various conditions to prevent improper use of information and to prevent cross-subsidies of affiliates by regulated utilities, but it does not require costly utility-to-utility transaction rules. It finds that there are no environmental problems resulting from the merger and it approves the Administrative Law Judge's (ALJ) rulings regarding discovery and sanctions.

I. Background

[1] Pacific Enterprises, Enova Corporation, Mineral Energy Company (Mineral Energy), B Mineral Energy Sub (Newco Pacific Sub) and G Mineral Energy Sub (Newco Enova Sub) (collectively referred to as applicants) request approval for a plan of merger of their respective companies. SoCalGas is the principal

subsidiary of Pacific Enterprises; SDG&E is the principal subsidiary of Enova Corporation.

Pursuant to the Agreement and Plan of Merger and Reorganization dated as of October 12, 1996 (Merger Agreement), Mineral Energy (whose name will be changed prior to completion of the merger), a California corporation, has been formed for the purpose of facilitating this merger. The outstanding capital stock of Mineral Energy is owned currently 50% by Enova Corporation and 50% by Pacific Enterprises. Under the plan of merger, two subsidiary companies of Mineral Energy have been created solely for the purpose of facilitating the plan of merger. G Mineral Energy Sub and B Mineral Energy Sub will merge with and into Enova Corporation and Pacific Enterprises, respectively, and as a result Enova Corporation and Pacific Enterprises will become subsidiaries of Mineral Energy, owning all of Enova Corporation's and Pacific Enterprises' outstanding common stock. Each share of each other class of capital stock of Enova Corporation and Pacific Enterprises shall be unaffected and shall remain outstanding. Following this transaction, Newco Pacific Sub and Newco Enova Sub will cease to exist. Mineral Energy will become the parent of Pacific Enterprises and Enova Corporation. Therefore, the corporate structures of Pacific Enterprises, SoCalGas, Enova Corporation, and SDG&E will remain unchanged. Pacific Enterprises and Enova Corporation will be controlled directly by Mineral Energy, and SoCalGas and SDG&E will become second tier subsidiaries of Mineral Energy. The existing common shareholders of Pacific Enterprises and Enova Corporation will be the common shareholders of Mineral Energy.

No lines, facilities, franchises, or permits

of either SoCalGas or SDG&E will be transferred to the other utility or other entity. Both utilities will remain regulated in their utility services by the Commission, having the same status of their outstanding debt, having the same assets and liabilities both still under the ownership of their respective parent holding companies.

A. Applicants and Their Principal Subsidiaries

1. Pacific Enterprises

Pacific Enterprises is a public utility company. Its principal subsidiary is SoCalGas, which is a public utility engaged in the purchase, storage, distribution, and sale of natural gas throughout southern California and portions of northern California. Its service area contains approximately 17 million persons. SoCalGas provides natural gas service through approximately 1 million independent active metering points, including residential, commercial, industrial, and electric generating customers. SoCalGas has both wholesale and retail gas sales through the "Hinshaw" pipeline, meaning the high pressure transmission pipelines from outside California and is under Federal Energy Regulatory Commission (FERC) jurisdiction under Section 1 of the Natural Gas Act (the NGA). SoCalGas has a high pressure transmission system receiving gas from local California production and the Transwestern Pipeline Company at North Needles, California; El Paso Gas Company (El Paso) at Top of the Hill, California; Pacific Gas & Electric Company (PG&E) at Kerr and at Pisgah, California; and the California Gas Transmission Company (Kern River Pipeline Company (Kern River), Wheeler Ridge and at Hector Ridge. The gas transmission system is presently receiving approximately 3.5 billion cubic feet of gas supply under ideal conditions and meets peak demand of approximately 10 billion cubic feet through a combination of flow and withdrawal of gas from storage.

EXHIBIT 22

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

(Mark One)

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES
EXCHANGE ACT OF 1934

For the fiscal year ended

December 31, 2007

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES
EXCHANGE ACT OF 1934

For the transition period from

to

Commission file number 1-14201

SEMPRA ENERGY

(Exact name of registrant as specified in its charter)

California

(State or other jurisdiction of incorporation or
organization)

33-0732627

(I.R.S. Employer Identification No.)

101 Ash Street, San Diego, California 92101

(Address of principal executive offices)

(Zip Code)

(619) 696-2034

(Registrant's telephone number, including area code)

SECURITIES REGISTERED PURSUANT TO SECTION 12(b) OF THE ACT:

Title of each class	Name of each exchange on which registered
Common stock, without par value	New York

SECURITIES REGISTERED PURSUANT TO SECTION 12(g) OF THE ACT: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Yes X No

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act.

Yes No X

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes X No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

 X

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, or a non-accelerated filer. See definition of "accelerated filer and large accelerated filer" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer ☒ Accelerated filer ☐ Non-accelerated filer ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes No X

Exhibit Index on page 42. Glossary on page 48.

Aggregate market value of the voting and non-voting common equity held by non-affiliates of the registrant as of June 30, 2007 was \$15.5 billion.

Registrant's common stock outstanding as of January 31, 2008, was 261,306,080 shares.

DOCUMENTS INCORPORATED BY REFERENCE:

Portions of the 2007 Annual Report to Shareholders are incorporated by reference into Parts I, II and IV.

Portions of the Proxy Statement prepared for the May 2008 annual meeting of shareholders are incorporated by reference into Parts II and III.

Natural Gas Storage

SoCalGas provides natural gas storage services for use by core, noncore and off-system customers. Sempra Utilities' customers are allocated a portion of SoCalGas' storage capacity. Other customers can bid and negotiate the desired amount of storage on a contract basis. The storage service program provides opportunities for these customers to purchase and store natural gas when natural gas costs are low, usually during the summer, to reduce winter purchases when natural gas costs are generally higher. This allows customers to select the level of service they desire to better manage their fuel procurement and transportation needs.

Demand for Natural Gas

The Sempra Utilities face competition in the residential and commercial customer markets based on the customers' preferences for natural gas compared with other energy products. In the non-core industrial market, some customers are capable of using alternate fuels which can affect the demand for natural gas. The company's ability to maintain its industrial market share is largely dependent on the relative spread between energy prices. The demand for natural gas by electric generators is influenced by a number of factors. In the short-term, natural gas use by electric generators is impacted by the availability of alternative sources of generation. The availability of hydroelectricity is highly dependent on precipitation in the western U.S. and Canada. In addition, natural gas use is impacted by the performance of other generation sources in the western U.S., including nuclear and coal, renewable energy and other natural gas facilities outside the service area. Natural gas use is also impacted by changes in end-use electricity demand. For example, natural gas use generally increases during extended heat waves. Over the long-term, natural gas used to generate electricity will be influenced by additional factors such as the location of new power plant construction and the development of renewable energy resources. Recently, more generation capacity has been constructed outside Southern California than within the Sempra Utilities' service area. This new generation will displace the output of older, less-efficient local generation, reducing the use of natural gas for local electric generation. Over the next few years, however, construction and planned construction of smaller natural gas-fired peaking and other electric generation facilities within the Sempra Utilities' service area are expected to result in a slight overall increase in the demand for local natural gas for electric generation.

Effective March 31, 1998, electric industry restructuring provided out-of-state producers the option to provide power to California utility customers. As a result, natural gas demand for electric generation within Southern California competes with electric power generated throughout the western U.S. Natural gas transported for electric generating plant customers may be significantly affected to the extent that regulatory changes and electric transmission infrastructure investment divert electric generation from the company's service area.

Growth in the natural gas markets is largely dependent upon the health and expansion of the Southern California economy and prices of other energy products. External factors such as weather, the price of electricity, electric deregulation, the use of hydroelectric power, development of renewable energy resources, development of new natural gas supply sources and general economic conditions can result in significant shifts in demand and market price. The Sempra Utilities added 62,000 and 85,000 new customer meters in 2007 and 2006, respectively, representing growth rates of 1.0 percent and 1.3 percent, respectively. The Sempra Utilities expect that their growth rate for 2008 will approximate that of 2007.

The natural gas distribution business is seasonal in nature and revenues generally are greater during the winter months. As is prevalent in the industry, the company injects natural gas into storage during the

Competition

Sempra Energy's non-utility businesses are among many others in the energy industry providing similar products and services. Most activities in which the company is engaged are very competitive and require significant capital investments and highly skilled and experienced personnel to compete. Many of Sempra Global's competitors may have significantly greater financial, personnel and other resources than the company.

Sempra Commodities

All aspects of Sempra Commodities' business are intensely competitive and are expected to remain so. Sempra Commodities' competitors are other brokers and dealers, investment banking firms, energy companies and other companies that offer similar products and services in the U.S. and globally. Sempra Commodities' competition is based on a number of factors, including transaction execution, products and services, innovation, reputation and price.

Sempra Commodities also faces intense competition in attracting and retaining qualified employees. Sempra Commodities' ability to compete effectively will depend upon the ability to attract new employees and retain and motivate existing employees.

Sempra Commodities' competitors include Goldman Sachs, JP Morgan and Morgan Stanley.

Sempra Generation

For sales of non-contracted power, Sempra Generation is subject to intense competition from energy marketers, utilities, industrial companies and other independent power producers. For a number of years, natural gas has been the fuel of choice for new power generation facilities for economic, operational and environmental reasons. While natural gas-fired facilities will continue to be an important part of the nation's generation portfolio, some regulated utilities are now constructing units powered by renewable resources, often with subsidies or under legislative mandate. These utilities generally have a lower cost of capital than most independent power producers and often are able to recover fixed costs through rate base mechanisms, allowing them to build, buy and upgrade generation without relying exclusively on market clearing prices to recover their investments.

When Sempra Generation sells power not subject to long-term contract commitments, it is exposed to market fluctuations in prices based on a number of factors, including the amount of capacity available to meet demand, the price and availability of fuel and the presence of transmission constraints. Some of Sempra Generation's competitors, such as electric utilities and distribution companies, have their own generation capacity, including nuclear generation. These companies, generally larger than Sempra Generation, have a lower cost of capital and may have competitive advantages as a result of their scale and location of their generation facilities.

Sempra Generation's competitors include Edison Mission Energy and FPL Energy LLC.

Sempra LNG

New supplies to meet North America's natural gas demand may be developed from a combination of the following sources:

- existing producing basins in the United States, Canada, and Mexico;
- frontier basins in Alaska, northern Canada and offshore deepwater;

EXHIBIT 23



Home > Natural Gas > Natural Gas Weekly Update

Glossary

Natural Gas Weekly Update

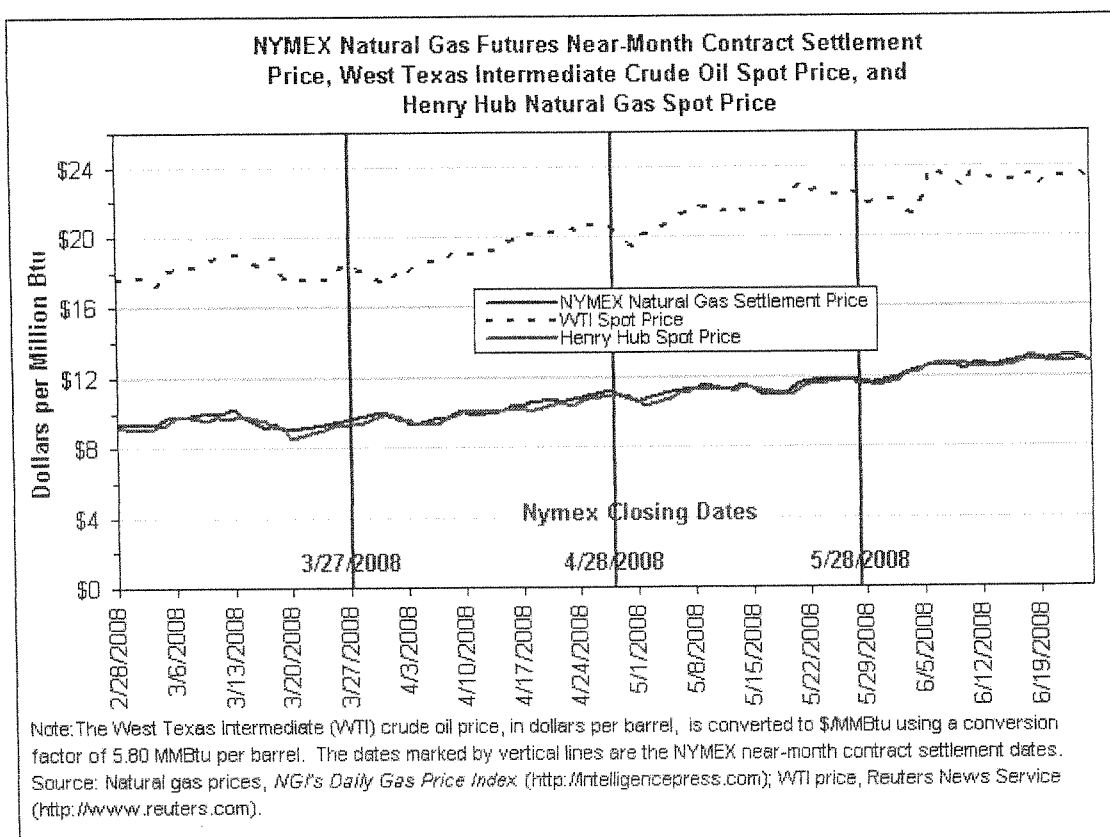
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[Weekly Natural Gas Storage Report](#)
[Natural Gas Analysis](#)

 Released: June 26, 2008
 Next Release: July 3, 2008

[Overview](#) [Prices](#) [Storage](#) [Other Market Trends](#) [Natural Gas Transportation Update](#)

Overview

- Natural gas spot price movements were mixed this report week (Wednesday–Wednesday, June 18-25), with price decreases generally occurring in producing areas in the Gulf of Mexico region and price increases at trading locations in the Rockies, the Midcontinent, and the Northeast. During the report week, the Henry Hub spot price decreased \$0.17 per million Btu (MMBtu) to \$12.76.
- At the New York Mercantile Exchange (NYMEX), a trend of rising prices for futures contracts was at least temporarily interrupted. After trading at \$13.20 per MMBtu on Monday, the futures contract for July delivery decreased by 45 cents in value over the next 2 days and ended the week 46 cents lower than last Wednesday. Yesterday's closing price of the July contract, for which the last trading day is today (June 26), was \$12.753.
- During the week ending Friday, June 20, estimated net injections of natural gas into underground storage totaled 90 billion cubic feet (Bcf). Working gas in underground storage as of June 20 was 2,033 Bcf, which is 2.7 percent below the 5-year (2003-2007) average.
- West Texas Intermediate (WTI) crude oil continued to trade above \$130 per barrel. However, a sharp decrease of \$2.57 per barrel on Wednesday, June 25, resulted in a net decline of \$2.62 in the crude oil price during the report week. The WTI average price yesterday was \$133.92 per barrel, or \$23.09 per MMBtu.


[More Summary Data](#)

Prices

Exceeding \$12 per MMBtu in most parts of country, natural gas prices far surpass historical records for this time of year. Along with the official start of the summer occurring this week, spot prices at the Henry Hub breached \$13 per MMBtu

for the first time since December 2005 in the aftermath of the hurricane season that year. Increases in demand from electric generators meeting air-conditioning demand have already occurred in the Southwest and part of the East Coast earlier this month and are expected to expand as the summer proceeds. In addition to the increasing demand from hot temperatures around the country, the elevated price level for natural gas currently appears related to growing financial investment in many commodities, including metals, agricultural products and crude oil, resulting in steep price increases. Since the beginning of 2008, the spot price at the Henry Hub has increased \$4.93 per MMBtu, or 63 percent, to yesterday's average of \$12.76. Nonetheless, with temperatures relatively moderate this week for the country as a whole and a decline in the price of crude oil, the net change in the Henry Hub spot price this report week was a decrease of 17 cents per MMBtu. Other spot markets along the Gulf Coast in Louisiana and East Texas registered regional price decreases of \$0.12 and \$0.15 per MMBtu, respectively. The average regional price yesterday was \$12.79 and \$12.53 in East Texas and Louisiana.

Although temperatures across the country have not yet reached summer peaks, rising temperatures in the Northeast likely supported price increases in the region during the report week. The average price in the Northeast region yesterday was \$13.65 per MMBtu, which was 23 cents higher than the previous Wednesday. The Northeast has experienced the highest prices in the country (outside Florida), owing in part to pipeline transportation costs for deliveries from the Gulf of Mexico region. Of the 18 trading days in June to date, the average price in the Northeast has fallen below \$13 per MMBtu only twice. For the week, the average spot price for delivery in New York off Transcontinental Gas Pipe Line (Transco Zone 6-NY) increased by \$0.35 per MMBtu to \$13.98, a premium of \$1.22 per MMBtu to the price at the Henry Hub.

In the Rockies region, the average price yesterday was \$10.35 per MMBtu, the lowest average regional price in the Lower 48 States as the region continues to experience shut-in supplies caused by maintenance of infrastructure and related activities. Maintenance related to pipelines serving the Opal processing plant in Wyoming has reduced pipeline capacity eastbound. The reduced supplies from this maintenance, as well as other projects, lowered upstream prices in the Rockies, while increasing the value of Midcontinent supplies during the week. The average price in the Midcontinent, which is located downstream of the Rockies producing region as a result of the new Rockies Express Pipeline, increased 38 cents per MMBtu to \$11.48.

The pace of deliveries of liquefied natural gas (LNG) imports remains considerably below last year's volumes and now appears to have been less than 200 Bcf for the first half of the year, which is less than half of the approximately 460 Bcf received last year during the same time period. LNG imports in June have averaged about 0.9 Bcf per day (based on sendout data from LNG import terminals), which is significantly less than the average of 2.8 Bcf per day in June 2007. Most flexible LNG cargoes are heading to Europe and Asia, where buyers continue to purchase LNG at prices higher than those that have prevailed in U.S. markets.

Spot Prices (\$ per MMBtu)	Thu 19 Jun	Fri. 20 Jun	Mon. 23 Jun	Tue. 24 Jun	Wed. 25 Jun
Henry Hub	13.09	12.76	12.92	12.96	12.76
New York	13.78	13.50	13.81	13.91	13.98
Chicago	12.95	12.58	12.79	12.88	12.71
Cal. Comp. Avg.*	12.55	12.11	12.47	12.56	12.29
Futures (\$/MMBtu)					
July delivery	12.861	12.994	13.203	13.011	12.753
August delivery	12.991	13.113	13.322	13.126	12.866
*Avg. of NGI's reported avg. prices for: Malin, PG&E citygate, and Southern California Border Source: NGI's Daily Gas Price Index (http://intelligencepress.com).					

At the NYMEX, the price of the near-month contract (for July delivery) decreased 45.7 cents per MMBtu during the report week to \$12.753 as prices for competing products decreased and the weather outlook appeared to limit demand by electric power generators in the near-term. The largest price movement of the week for the near-term contract occurred yesterday (June 25) as the July contract lost approximately 26 cents per MMBtu. The downward price pressure appeared related to the crude oil price, which decreased by \$2.57 per barrel following the release of a market report by the Energy Information Administration. Recent high natural gas prices extend throughout the forward curve, suggesting prices are expected to remain elevated through at least the next winter heating season. At the end of trading yesterday, the 12-month strip, which is the average for futures contracts over the next 12 months, was priced at \$12.804 per MMBtu, a decrease of about 31 cents since last Wednesday. Beginning with the July 2008 contract, futures prices increase steadily through the beginning of 2009. The highest-priced contract in the futures strip is the January 2009 contract, which closed at \$13.84 per MMBtu on June 25.

Estimated Average Wellhead Price						
	Dec-07	Jan-08	Feb-08	Mar-08	Apr-08	May-08
Price (\$ per Mcf)	6.53	6.99	7.55	8.29	8.94	9.81
Price (\$ per MMBtu)	6.35	6.79	7.34	8.06	8.69	9.53

Note: Prices were converted from \$ per Mcf to \$ per MMBtu using an average heat content of 1,029 Btu per cubic foot as published in Table A4 of the Annual Energy Review 2006. Source: Energy Information Administration, Office of Oil and Gas.

[More Price Data](#)

Storage

Working gas in storage increased to 2,033 Bcf as of Friday, June 20, 2008, according to EIA's *Weekly Natural Gas Storage Report* (see [Storage Figure](#)). This report week's implied net injection of 90 Bcf is slightly below both the 5-year average injection of 94 Bcf and last year's injection of 96 Bcf. As a result, storage activity during the report week increased the difference between current inventories and the 5-year average level from 52 Bcf below average to 56 Bcf below. Further, the deficit between current inventories and levels last year at this time increased from 376 Bcf to 382 Bcf.

The slightly-below-average net injection came during a week when warmer-than-normal temperatures in the Lower 48 States, particularly in the West South Central and Pacific Census Divisions, likely generated weather-related demand (by power-generators for air-conditioning needs). As indicated by National Weather Service degree-day data, the number of cooling degree-days totaled 14 percent above normal for the country as a whole. However, temperatures remained below extreme levels typical for later in the cooling season with an average overall temperature for the week of just 72 degrees Fahrenheit, 1 degree above normal (see [Temperature Maps and Data](#)).

	Current Stocks 6/20/08	One Week Prior Stocks 6/13/08	Implied Net Change from Last Week	Estimated Prior 5-Year (2003-2007) Average	Percent Difference from 5 Year Average
All Volumes in Bcf					
East Region	1,059	997	62	1,085	-2.4
West Region	289	279	10	315	-8.3
Producing Region	685	667	18	689	-0.6
Total Lower 48	2,033	1,943	90	2,089	-2.7

Source: Energy Information Administration: Form EIA-912, "Weekly Underground Natural Gas Storage Report," and the Historical Weekly Storage Estimates Database. Row and column sums may not equal totals due to independent rounding.

[More Storage Data](#)

Other Market Trends

FERC Authorizes Final Rule on Secondary Capacity Release. On June 19, 2008, the Federal Energy Regulatory Commission (FERC) authorized a final rule on secondary natural gas capacity release markets that removes price caps on short-term releases of capacity and increases flexibility in asset management agreements. Under an asset management arrangement, a capacity holder releases some or all of its pipeline capacity to an asset manager who agrees either to purchase from or supply the natural gas needs of the capacity holder. The rule is intended to strengthen competition in the secondary capacity release markets, enable shippers to obtain gas supplies, improve access to the interstate natural gas pipeline system, as well as provide more accurate price signals on the market value of pipeline capacity. The final rule adopts and clarifies provisions of the November 2007-proposed rule, which called for permanent removal of the rate cap on capacity release transactions of 1 year or less. Furthermore, FERC modified policies and regulations to facilitate and accommodate the use of asset management arrangements. The final rule is expected to go into effect during the second half of July.

MMS Publishes Open Access Rule. On June 18, the Minerals Management Service (MMS) announced a final rule on Open and Nondiscriminatory Movement of Oil and Gas, which provides procedures for a shipper transporting oil or gas production from Federal leases on the Outer Continental Shelf (OCS) to follow if it believes it has been denied open and nondiscriminatory access to pipelines on the OCS. Pipeline companies must provide open access to their offshore pipeline according to the rule. The final rule is expected to go into effect on August 18.

EIA Releases Highlights of the International Energy Outlook. The Energy Information Administration (EIA) released the report *International Energy Outlook 2008 - Highlights* on June 25, 2008. The *International Energy Outlook 2008 (IEO2008)*,

which is scheduled to be released sometime in July, will present EIA's assessment of the outlook for international energy markets through 2030. Nations outside the Organization for Economic Cooperation and Development (Non-OECD) are projected to have the most growth in energy demand from 2005 to 2030 as a result of strong expected economic growth. U.S. projections appearing in IEO2008 are consistent with those published in EIA's Annual Energy Outlook 2008 (AEO2008). According to the report, fossil fuels are expected to continue supplying much of the energy used all over the world. In the reference case, natural gas consumption increases from 104 trillion cubic feet (Tcf) in 2005 to 158 Tcf in 2030. Natural gas is expected to replace oil whenever possible because of lower carbon dioxide emissions from natural gas combustion. In 2030, generated electricity is expected to account for 35 percent of the world's total natural gas consumption. Increased production from Non-OECD nations is projected to fulfill the expanding needs of natural gas.

Natural Gas Transportation Update

- Natural Gas Pipeline Company of America (NGPL) has postponed installing its Oklahoma Extension #1 in Carter County, Oklahoma, until July 15. The project was previously scheduled for June 24.
- El Paso Natural Gas Company declared a systemwide strained operating condition (SOC) effective June 21 with the imbalance tolerance set at 10 percent. The SOC was the result of shippers' takes that exceeded scheduled quantities, leading to a significant loss in the system linepack. El Paso's limited withdrawal ability at the Washington Ranch storage facility in Carlsbad, New Mexico, exacerbated the linepack problem. In addition to the restrictions on takes, the SOC, which was lifted on June 23, resulted in the suspension of interruptible storage service.
- Gulf South Pipeline Company began unscheduled maintenance on June 23 at the Napoleonville compressor station in Assumption Parish, Louisiana, which is expected to last for approximately 2 weeks. During this period, capacity through the station will be reduced by as much as 150,000 decatherms (Dth) per day. Gulf South also announced that it will begin 5 days of scheduled maintenance on June 30 at the Jackson compressor station in Mississippi. Capacity at this point will be reduced by about 100,000 Dth per day.
- Northwest Pipeline Corporation invoked a realignment operational flow order (OFO) provision at the Meacham compressor station in Meacham, Oregon, on June 26 because net scheduled quantities exceeded operational capacity by 22,000 Dth per day. Under the realignment OFO provision, Northwest can ask shippers to realign their nominations from receipt points south of Meacham to receipt points north of Meacham. An earlier realignment OFO, which took effect June 19, was lifted on June 25. However, Northwest reinstated it effective June 26 until further notice. According to the pipeline, the OFO was reinstated because the net scheduled quantities once again exceeded operational capacity and shipper feedback indicated that nominations are likely to exceed capacity without an OFO in place.
- Pacific Gas and Electric Company issued a systemwide high inventory OFO for June 26. The pipeline set penalties at \$1 per Dth for positive daily imbalances exceeding 7 percent tolerance.

See [Weekly Natural Gas Storage Report](#) for additional Natural Gas Storage Data.

See [Natural Gas Analysis](#) for additional Natural Gas Reports and Articles.

See [Short-Term Energy Outlook](#) for additional Natural Gas Prices, Supply, and Demand.

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EXHIBIT 24

SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM 10-K

(Mark One)

☒ Annual report pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for the fiscal year ended December 31, 2002

OR

☐ Transition report pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for the transition period from

to

SEMPRA ENERGY

(Exact name of registrant as specified in its charter)

CALIFORNIA

1-14201

33-0732627

(State of incorporation
Employer
or organization)
No.)

(Commission
File Number)

(I.R.S.
Identification

101 ASH STREET, SAN DIEGO, CALIFORNIA

92101

(Address of principal executive offices)
Code)

(Zip

Registrant's telephone number, including area code
(619) 696-2000

SECURITIES REGISTERED PURSUANT TO SECTION 12(b) OF THE ACT:

exchange
Title of each class
registered

Name of each
on which

Common stock, without par value

New York and Pacific

Mandatorily redeemable trust preferred securities New York
Equity units, due 2007 New York

SECURITIES REGISTERED PURSUANT TO SECTION 12(g) OF THE ACT: None

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months and (2) has been subject to such filing requirements for the past 90 days.

Yes ☒ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☒

Exhibit Index on page 38. Glossary on page 45.

ditional properties will depend on Sempra Energy's income-tax position.

February 2003, Sempra LNG Corp., a newly created subsidiary of Global, announced an agreement to acquire the proposed Hackberry, La., JG project from a subsidiary of Dynegy, Inc. Sempra LNG Corp. initially will pay Dynegy \$20 million, with additional payments contingent performance of the project. The project has received preliminary approval from the FERC and expects a final decision later this year. If project is approved, Sempra LNG Corp. will build an LNG receiving facility capable of processing up to 1.5 bcf per day of natural gas. The total cost of the project is expected to be about \$700 million. The project could begin commercial operations as early as 2007.

STATUTES AND REGULATION -- CALIFORNIA UTILITIES

Electric Industry Restructuring

flawed electric-industry restructuring plan, electricity supply/demand imbalances, and legislative and regulatory responses have significantly impacted the company's operations. Additional information on electric-industry restructuring is provided above under "Electric Operations," in Management's Discussion and Analysis of Financial Condition and Results of Operations," and in Note 13 of the notes to Consolidated Financial Statements in the 2002 Annual Report to Shareholders, which is incorporated by reference.

Natural Gas Industry Restructuring

he natural gas industry in California experienced an initial phase of restructuring during the 1980s. In December 2001 the CPUC issued a decision adopting provisions affecting the structure of the natural gas industry in California, some of which could introduce additional volatility into the earnings of the California Utilities and other market participants. During 2002 the California Utilities filed a proposed implementation schedule and revised tariffs and rules required for implementation. However, protests of these compliance filings were filed, and the CPUC has not yet authorized implementation of most of the provisions of its decision. Additional information on natural gas industry restructuring is provided in "Management's Discussion and Analysis of Financial Condition and Results of Operations" and in Note 14 of the notes to Consolidated Financial Statements in the 2002 Annual Report to Shareholders, which is incorporated by reference.

balancing Accounts

In general, earnings fluctuations from changes in the costs of natural gas and consumption levels for the majority of natural gas are eliminated through balancing accounts authorized by the CPUC. As a result of California's electric restructuring law, overcollections recorded in the electric balancing accounts were applied to transition cost recovery, and fluctuations in certain costs and consumption levels can now affect earnings from electric operations. In addition, fluctuations in certain costs and consumption levels affect earnings

nt expense for operating leases totaled \$90 million in 2002, \$92 million in 2001 and \$102 million in 2000. Depreciation expense for capitalized leases is included in depreciation on the Consolidated Statements of Income.

Construction Projects

October 2001, Sempra Energy announced plans to develop a major new liquefied natural gas (LNG) receiving terminal to bring natural gas supplies into northwestern Mexico and southern California. SEI initially purchased a 300-acre site on the Pacific Coast, north of Ensenada, California, Mexico for the terminal for a purchase price of \$19.7 million. Subsequently, it purchased additional land for the terminal for \$2.6 million. As currently planned, the plant would have a send-out capacity of approximately 1 billion cubic feet per day of natural gas through a new 40-mile pipeline between the terminal and existing pipelines in the San Diego/Baja California border area. The project is currently estimated to cost \$600 million and to commence commercial operations in 2007.

February 2003, Sempra LNG Corp., a newly created subsidiary of Global, announced an agreement to acquire the proposed Hackberry, La., LNG project from a subsidiary of Dynegy, Inc. Sempra LNG Corp. initially will pay Dynegy \$20 million, with additional payments contingent on the performance of the project. The project has received preliminary approval from the FERC and expects a final decision later this year. If the project is approved, Sempra LNG Corp. intends to build an LNG receiving facility capable of processing up to 1.5 billion cubic feet per day of natural gas. The total cost of the project is expected to be about \$700 million. The project could begin commercial operations as early as 2007.

February 2001, the company announced plans to construct Termoelectrica de Mexicali, a \$350 million, 600-megawatt power plant near Mexicali, Mexico. Fuel for the plant will be supplied via the newly constructed pipeline from Arizona to Tijuana referred to below. It is anticipated that the electricity produced by the plant will be available for markets in California, Arizona and Mexico via a newly constructed 30,000-volt transmission line. Construction of the power plant began in the second half of 2001. \$308 million has been invested in the project, which is scheduled for completion by mid-2003. SER has approximately \$8 million of commitments remaining in the project at December 31, 2002.

December 2000, SER obtained approvals from the appropriate state agencies to construct the Elk Hills Power Project, a \$395 million 70-megawatt power plant near Bakersfield, California. Elk Hills is being developed in a 50/50 joint venture with Occidental. As of December 31, 2002, SER has invested \$172 million in the project and has commitments of approximately \$15 million. The project is anticipated to be completed in May 2003. Information concerning related litigation with Occidental is provided below.

December 2000, SER obtained approval from the appropriate state agencies to construct the Mesquite Power Plant (Mesquite Power). Located near Phoenix, Arizona, Mesquite Power is a \$690 million, 1,250-megawatt project which will provide electricity to wholesale energy markets in the Southwest. Construction began in September 2001, commercial operations at 50-percent capacity are expected to commence in June 2003 and project completion is anticipated for January 2004. Expenditures as of December 31, 2002 are \$558 million and SER has commitments of \$70 million related to this project. Most project expenditures are financed through a synthetic lease agreement. Financing under the synthetic lease in excess of \$280 million requires 103 percent collateralization through the purchase of U.S. Treasury obligations in similar amounts. As of December 31, 2002, the company had purchased \$228 million of U.S. Treasury obligations as collateral, which is included in investments on the Consolidated Balance Sheets.

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R, as construction agent for the lessor, is responsible for completing construction in a timely manner. Upon completion of construction, R is required to make lease payments to the lessor in an amount sufficient to provide a specified return to the investors. In 2005, SER has the option to extend the lease at fair market value, purchase the project at a fixed amount, or act as remarketing agent for the lessor to sell the project. If SER elects the remarketing option, it may be required to pay the lessor up to 85 percent of the project cost if the proceeds from remarketing are insufficient to repay the lessor's investors. The lease is guaranteed by Sempra Energy, and the availability of additional financing is conditioned upon Sempra Energy's continuing to have credit ratings of at least BBB- by S&P or Baa3 by Moody's. The lease also requires Sempra Energy to maintain a debt-to-total capitalization ratio, (as defined in the lease), of not to exceed 65 percent. As a synthetic lease, neither the plant asset nor the related liability is included on the Consolidated Balance Sheets. If they were, property, plant and equipment and long-term debt would each have been increased by \$545 million at December 31, 2002, reflecting reimbursements for costs incurred on the project, including costs subject to the collateralization requirements noted above. The company is currently reviewing the synthetic lease to determine the application of FASB Interpretation 46 (FIN 46), "Consolidation of Variable Interest Entities" related to the Mesquite Power Plant. Under FIN 46, the company would be required to increase property, plant and equipment and long-term debt by the total costs incurred and subject to collateralization requirements under the synthetic lease, as noted above. See further discussion of FIN 46 in Note 1.

Other Commitments and Contingencies

1 May 2001, SER entered into a ten-year agreement with the DWR to supply up to 1,900 megawatts of power to the state. SER may, but is not obligated to, deliver most of this electricity from its projected portfolio of plants in the western United States and Baja California, Mexico. If SER elects to use these plants to supply the DWR, those sales would comprise more than two-thirds of the projected capacity of the plants. The profits from the sales to the DWR are significant to the company's ability to increase its earnings. Subsequent to the state's signing of this contract and electricity-supply contracts with other vendors, various state officials have contended that the rates called for by the contracts are too high. These rates substantially exceed current spot-market prices for electricity, but are substantially lower than those prevailing at the time the contracts were signed. This contract is discussed further under "Litigation."

n February 2002, the CPUC and the California Electricity Oversight Board petitioned the FERC to determine that the contracts do not provide just and reasonable rates, and to abrogate or reform the contracts. On April 24, 2002, the FERC ordered hearings on the complaints. The order requires the complainants to satisfy a "heavy" burden of proof to support a revision of the contracts, and cited the FERC's long-standing policy to recognize the sanctity of contracts, from which it has deviated only in "extreme circumstances." In December 2002, a FERC administrative law judge held formal hearings and in January 2003 issued a partial, initial decision recommending that the validity of SER's contract be determined under a "public interest" standard that requires the complainants to satisfy a significantly higher standard of review to invalidate the SER contract than would a just and reasonable standard. Hearings began in December 2002 and settlement negotiations are ongoing. The FERC has indicated

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